

Claims

[c1] An apparatus for barrier submersion cooking comprising:

- a vessel effectively dimensioned such that when placed into hot liquid cooking medium a vent remains above a top surface of the liquid cooking medium;
- a food item containment area within the vessel for receiving a food item dimensioned such that the food item is in intimate contact with an interior vessel wall; and
- a rack for lowering the vessel into the liquid cooking medium to an effective depth such that the food item containment area is below the top surface of the liquid cooking medium and the vent is above the top surface of the liquid cooking medium.

[c2] The apparatus of claim 1 wherein the vent is an open vessel top.

[c3] The apparatus of claim 1 wherein the vessel includes vessel side walls effectively tapered to effect ease of food item removal after cooking.

[c4] The apparatus of claim 3 wherein the vessel side walls form a predetermined geometric shape as required to substantially maintain intimate contact with the food item.

[c5] The apparatus of claim 1 wherein vessel superior sidewalls extend from the food item containment area an effective distance to prevent hot liquid cooking medium from entering the food item containment area when the vessel is submersed into the hot liquid cooking medium.

[c6] The apparatus of claim 5 wherein the vessel superior sidewalls terminate in a mounting flange used to support the vessel within the rack.

- [c7] The apparatus of claim 5 wherein the vessel superior sidewalls are tapered outward.
- [c8] The apparatus of claim 1 wherein the vessel is a rounded bottom vessel.
- [c9] The apparatus of claim 1 wherein the vessel is formed of a material that substantially instantaneously transfers heat from the hot liquid cooking medium to produce effective frying temperature at the interior vessel wall.
- [c10] The apparatus of claim 9 wherein the vessel is formed of a material selected from the group consisting of thin walled aluminum, copper, aluminum alloy, copper alloy, gold, gold alloy, thin walled stainless steel and combinations thereof.
- [c11] The apparatus of claim 1 wherein the food item comprises a filler encased by dough.
- [c12] The apparatus of claim 1 further comprising a vessel top cap having a vent to allow hot moisture and vapor to escape, dimensioned to simultaneously contact the food item and the superior vessel side walls.
- [c13] The apparatus of claim 1 wherein the vessel comprises a pouch fabricated from a material with a heat transfer rate of an effective value to substantially instantaneously transfer heat from the liquid cooking medium to create effective frying temperature at the food item, wherein the pouch food item containment area is compressed around the food item so as to come into intimate contact with the food item while maintaining a viable pouch open top to serve as the vent.
- [c14] The apparatus of claim 13 wherein the pouch is fabricated of a material selected from the group consisting of aluminum, copper, aluminum alloy,

copper alloy, gold, gold alloy, and combinations thereof.

- [c15] The apparatus of claim 13 wherein the pouch comprises liquid impermeable sealed sides and bottom, wherein the seal is fabricated from a method selected from the group consisting of welding, folding and combinations thereof, and a vapor permeable top sealed after insertion of the food item by a seal selected from the group consisting of an interrupted seal, a vapor permeable seal and a pressed seal.
- [c16] The apparatus of claim 1 wherein the vessel comprises a first and second cooking chamber half, each having a first and second food cavity, respectively, dimensioned such that when the first and second cooking chamber halves are mated, the first and second food cavity form the food item containment area.
- [c17] The apparatus of claim 16 wherein a top surface of the cooking chamber serves as the vent.
- [c18] The apparatus of claim 16 further including a channel fabricated into each of the first and second cooking chamber halves and positioned such that when the first and second cooking chamber halves are mated, the mated channels form the vent.
- [c19] The apparatus of claim 16 further comprising a gasket incorporated into sides and bottom of the vessel to insure a liquid tight seal; and a locking clamp for maintaining the mating.
- [c20] The apparatus of claim 19 wherein the locking clamp is incorporated into the rack.
- [c21] The apparatus of claim 19 wherein the gasket is incorporated into sides and

bottom of the first cooking chamber half.

- [c22] The apparatus of claim 19 wherein the gasket is a flexible formed gasket permanently attached to sides and bottom of the first and second cooking chamber halves such that when the first and second cooking chamber halves are mated, the formed gasket flexes outward.
- [c23] The apparatus of claim 22 further including a stick inserted into the vessel for cooking batter on a stick.
- [c24] The apparatus of claim 1 wherein the vessel includes a plurality of flutes for imparting a predetermined shape to a batter cooked within the vessel.
- [c25] The apparatus of claim 24 wherein the rack holds a stick in the batter during cooking.
- [c26] The apparatus of claim 24 wherein a top cap holds a stick in the batter during cooking.
- [c27] The apparatus of claim 24 wherein a stick retaining attachment fabricated into a vessel bottom holds a stick in the batter during cooking.
- [c28] An apparatus for barrier submersion cooking comprising:
 - a vessel effectively dimensioned such that when placed into hot liquid cooking medium a vent remains above a top surface of the liquid cooking medium;
 - a food item containment area within the vessel for receiving a food item dimensioned such that the food item is in intimate contact with an interior vessel wall;
 - a vessel top cap dimensioned to simultaneously contact the food item and superior vessel side walls; and

a rack for lowering the vessel into the liquid cooking medium to an effective depth such that the food item containment area is below the top surface of the liquid cooking medium and the vent is above the top surface of the liquid cooking medium.

- [c29] The apparatus of claim 28 wherein the vessel includes a step positioned to form a positive stop for the top cap.
- [c30] The apparatus of claim 28 wherein the top cap further includes a handle.
- [c31] The apparatus of claim 28 where the top cap further includes a vent to allow hot moisture and vapor to escape.
- [c32] The apparatus of claim 28 wherein vessel side walls are effectively tapered to effect ease of food item removal after cooking.
- [c33] The apparatus of claim 28 wherein the vessel side walls form a predetermined geometric shape as required to substantially maintain intimate contact with the food item.
- [c34] The apparatus of claim 28 wherein vessel superior sidewalls extend from the food item containment area an effective distance to prevent hot liquid cooking medium from entering the food item containment area when the vessel is submersed into the hot liquid cooking medium.
- [c35] The apparatus of claim 34 wherein the vessel superior sidewalls terminate in a mounting flange used to support the vessel within the rack.
- [c36] The apparatus of claim 34 wherein the vessel superior sidewalls are tapered outward.
- [c37] The apparatus of claim 28 wherein the vessel is a rounded bottom vessel.

- [c38] The apparatus of claim 28 wherein the vessel and the top cap are formed of a material that substantially instantaneously transfers heat from the hot liquid cooking medium to produce effective frying temperature at the interior vessel wall and a top cap floor cooking surface.
- [c39] The apparatus of claim 28 wherein the vessel and top cap are formed of a material selected from the group consisting of thin walled aluminum, copper, aluminum alloy, copper alloy, gold, gold alloy, thin walled stainless steel and combinations thereof.
- [c40] The apparatus of claim 28 wherein the food item comprises a filler encased by dough.
- [c41] The apparatus of claim 28 wherein the rack applies an effective amount of downward pressure to create tight, intimate contact between the top cap and the food item and the superior vessel side walls.
- [c42] The apparatus of claim 41 wherein the downward pressure is created by a spring.
- [c43] The apparatus of claim 28 further comprising a non-stick surface applied to the interior vessel wall and a top cap floor cooking surface.
- [c44] An apparatus for barrier submersion cooking comprising:
 - a vessel for submersion in a liquid cooking medium having a food item containment area within the vessel for receiving a food item incased in a flexible sheet material; and
 - a rack for lowering the vessel into the liquid cooking medium to an effective depth such that the food item containment area is below a top surface of the liquid cooking medium and a vessel top is above the top

surface of the liquid cooking medium;
wherein the flexible sheet material is in intimate contact with the food item and a cooking vessel interior surface; includes a tail piece to serve as a handle; and has a heat transfer rate of an effective value to substantially instantaneously transfer heat from the liquid cooking medium through the vessel to create effective frying temperature at the food item.

[c45] The apparatus of claim 44 wherein the flexible sheet material is wrapped around the food item such that it overlaps itself and forms the tail piece.

[c46] An apparatus for barrier submersion cooking comprising:
a steaming vessel containing an effective quantity of water so that when placed into hot liquid cooking medium an effective amount of steam is produced;
a vented cooking chamber seated within the steaming vessel;
a food item contained within the vented cooking chamber; and
a rack for lowering the steaming vessel into the hot liquid cooking medium an effective depth to produce an effective amount of steam without permitting the hot liquid cooking medium to enter the cooking chamber.

[c47] The apparatus of claim 46 further comprising a cap effectively positioned over the food item to promote steam circulation in and around the food item.

[c48] The apparatus of claim 47 wherein the cap is vented.

[c49] The apparatus of claim 46 wherein a cooking chamber lower section is dimensioned to allow the food item to fit loosely for promoting steam circulation in and around the food item yet not allow the food item to contact

a steaming vessel wall.

[c50] A method for barrier submersion cooking comprising the steps of:

placing a food item within a food item containment area of a vessel dimensioned such that the food item is in intimate contact with an interior vessel wall; the vessel effectively dimensioned so that when the vessel is submersed into hot liquid cooking medium a vent remains above a top surface of the liquid cooking medium;

placing the vessel within a rack;

lowering the rack into the liquid cooking medium for an effective cooking time to an effective depth such that the food item containment area is below the top surface of the liquid cooking medium and the vent is above the top surface of the liquid cooking medium;

removing the rack from the liquid cooking medium after cooking has completed; and

removing the cooked food item from the vessel.

[c51] A method for barrier submersion cooking comprising the steps of:

placing a food item within a food item containment area of a vented cooking vessel dimensioned such that the food item is held loosely within the cooking vessel and the food item does not contact a steaming vessel wall; the cooking vessel effectively dimensioned such that when a steaming vessel is submersed into hot liquid cooking medium a vent remains above a top surface of the liquid cooking medium;

placing an effective quantity of water into the steaming vessel so that when placed into hot liquid cooking medium an effective amount of steam is produced;

placing the cooking vessel within the steaming vessel;
lowering the steaming vessel into the liquid cooking medium for an effective cooking time to an effective depth to produce an effective amount of steam without permitting the hot liquid cooking medium to enter the cooking chamber; and
removing the cooked food item from the cooking vessel after cooking has completed.

[c52] The method of claim 51 wherein the step of lowering the steaming vessel into the liquid cooking medium includes the further steps of placing the steaming vessel within a rack and lowering the rack into the liquid cooking medium.

[c53] The method of claim 52 wherein the step of placing the steaming vessel within the rack is done at the time of rack fabrication.

[c54] The method of claim 52 wherein the step of placing the steaming vessel within the rack is done subsequent to rack fabrication.

[c55] A cooking rack comprising:
a body having an open side for receiving a cooking vessel; a bottom support member for supporting the cooking vessel, the body effectively liquid permeable to allow a liquid to freely flow within the body;
a handle attached to the body;
an anti-float member effectively sized and located to overhang the cooking vessel to inhibit cooking vessel float; and
a hanger for suspending the cooking rack.

[c56] A cooking vessel comprising:
a food item containment area within the vessel for receiving a food

item dimensioned such that the food item is in intimate contact with an interior vessel wall;

a vessel top cap dimensioned to simultaneously contact the food item and superior vessel side walls; and

a vent for releasing vapors.